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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Timo Varpula

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EXAMINER

BALDRIDGE, BENJAMIN M

ART UNIT

PAPER NUMBER

2831

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,381	Applicant(s) VARPULA ET AL.	
	Examiner Benjamin M. Baldrige	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2009 and 17 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23 - 25, 27 - 28, 30 - 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23 - 25, 27 - 28, 30 - 31 is/are rejected.
- 7) ☒ Claim(s) 31 - 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 May 2009 has been entered.
2. Amended claims 23 – 25, 27 – 28, 30 – 33 are presented for examination. Claims 1 – 22, 26, 29, 34 – 43 are cancelled.

Claim Objections

3. Claims 28 and 31 are objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 28 and 31 recite the limitation "the sensor element is disposed alone inside the package" in lines 2 – 3. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, the limitation "inside the package" will be construed to mean inside the package containing foodstuffs or medicinal substances, as discussed in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Gershenfeld et al. (US Patent 6,025,725, February 15, 2000, hereinafter referred to as Gershenfeld).

As to claim 23, Gershenfeld discloses:

A sensor arrangement remotely readable by a separate reader utilizing radio frequencies for determining desired quantities from sources (Figure 1A, items 50, 100; Column 2, lines 18 – 22, 39 – 47; note also lines 57 - 59, which specifies radio frequencies (10 MHz or less));

an LC resonator which comprises a capacitor and a coil (Column 2, lines 18 – 24; note explicit disclosure of LC resonator and capacitance and inductance; note also Column 2, lines 53 – 55, disclosing use of spiral coils);

a sensor element coupled to the LC resonator, whose properties change as a function of a measurable quantity, the sensor element being coupled capacitively or inductively with the LC resonator without forming a direct galvanic contact (Column 2, lines 18 – 31; note explicit disclosure of "material having an electrical property altered by an external condition; note also position of the sensor element 10 between inductors 32 and 34 in Figure 1A, clearly showing inductive coupling with the LC resonator, without galvanic contact);

the capacitor or the coil is configured to generate an electric field or magnetic field on a location of the sensor (Figure 1A, items 100, 34, 10)

the sensor element directly affects the electric field or the magnetic field generated by the capacitor or the coil (Column 2, lines 6 - 12, 22 - 27).

As to claim 24, Gershenfeld discloses:

The sensor element is cumulatively variable (Column 6, lines 46 - 54, disclosing use of a piezoelectric sensor element, which varies cumulatively as force is applied; note also sensing of humidity and temperature, Column 6, lines 58 - 63; temperature and humidity are both interpreted to affect the sensor element disclosed by Gershenfeld in a cumulative fashion).

As to claim 27, Gershenfeld discloses:

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the sensor element capacitively couples to the LC resonator, and wherein the sensor element is disposed on the top of the coil (Column 6, lines 8 - 21, in which use of dielectric material is disclosed; note that capacitive coupling to the LC resonator is inherent in the structure shown in Figures 1A and 1B, in which the dielectric material (item 10) is sandwiched between the spiral inductors; note also Figure 7A, items 10, 32, and 72, clearly showing the sensor element on top of the coil).

As to claim 30, Gershenfeld discloses:

the sensor element inductively couples to the LC resonator, and wherein the sensor element is disposed in the middle of the coil (Figure 7A, items 10, 32, 72, clearly showing the sensor element in the middle of the coil; note also that inductive coupling of the spiral coil (item 32) to the sensor element (item 10) in Figure 7A is inherent in the structure shown in Figure 7A).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 25, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gershenfeld et al. (US Patent 6,025,725, February 15, 2000, hereinafter referred to as Gershenfeld) in view of Smolander et al. (US Patent Application Publication Pub. No. US 2007/0176773 A1, Pub. Date August 2, 2007, hereinafter referred to as Smolander).

As to claim 25, Gershenfeld fails to disclose:

The sensor arrangement is suitable for use in monitoring deterioration of foodstuffs and medicinal substances.

Smolander discloses:

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The sensor arrangement is suitable for use in monitoring deterioration of foodstuffs and medicinal substances (Abstract, lines 1 – 3; [0020], lines 3 – 10, and elsewhere in Smolander; note that Smolander explicitly discloses the use of a sensor arrangement, remotely interrogated, that indicates a deteriorated condition of foodstuffs or medicinal substances)

Given the teaching of Smolander, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the sensor arrangement of Gershenfeld to allow its use for monitoring deterioration of foodstuffs and medicinal substances by employing a sensor suited to that purpose, as disclosed by Smolander, in order to detect deterioration in packaged foodstuffs or medicinal materials.

As to claims 28 and 31, Gershenfeld discloses:

the sensor element capacitively couples to the LC resonator [claim 28] (Column 6, lines 8 - 21, in which use of dielectric material is disclosed; note that capacitive coupling to the LC resonator is inherent in the structure shown in Figures 1A and 1B, in which the dielectric material (item 10) is sandwiched between the spiral inductors);

the sensor element inductively couples to the LC resonator [claim 31] (Figure 7A, items 10, 32, 72; note that inductive coupling of the spiral coil (item 32) to the sensor element (item 10) in Figure 7A is inherent in the structure shown in Figure 7A).

As to the limitation

the sensor element is disposed alone inside the package [claims 28, 31]

recited in the instant claims, the use of a sensor element alone inside the package would have been an obvious modification of the apparatus of Gershenfeld and Smolander, as remote coupling of electromagnetic fields from a resonant sensor to an object, for the purposes of sensing the presence or qualities of that object, is well known in many different electrical sensor design arts, and would have been obvious to persons of ordinary skill in those arts, as a routine exercise of ordinary skill, and as the application of a known technique to yield predictable results. Moreover, a person of

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ordinary skill has good reason to pursue known options within his or her technical grasp. Successful use of these options is considered the product of ordinary skill and common sense, not innovation.

Allowable Subject Matter

8. Claims 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, singly or in combination, a sensor arrangement remotely readable by a separate reader utilizing radio frequencies for determining desired quantities from sources, including

the inductively couplable sensor element is disposed inside an electrically conductive ring which is thicker than the sensor element.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin M. Baldrige whose telephone number is 571 270 1476. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571 272 2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Diego Gutierrez/
Supervisory Patent Examiner, Art Unit 2831

/Benjamin M Baldrige/
Examiner, Art Unit 2831